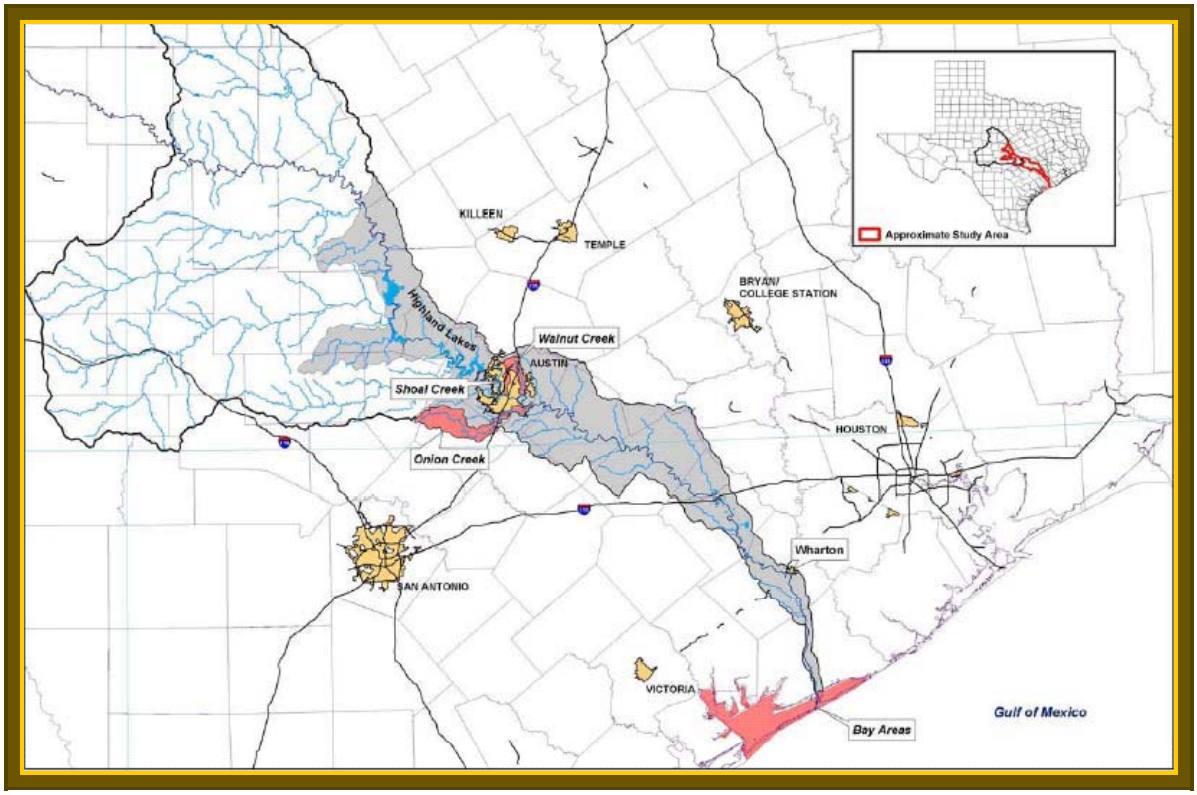
FINAL
PROGRAMMATIC
ENVIRONMENTAL IMPACT STATEMENT

Flood Damage Reduction and Ecosystem Restoration

Lower Colorado River Basin,
Colorado River, Texas



August 2005

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Colorado River, Texas

U.S. Army Corps of Engineers
Fort Worth District
Fort Worth, Texas

August 2005

Final Programmatic Environmental Impact Statement
Flood Damage Reduction and Ecosystem Restoration
Colorado River, Texas

Lead Agency:	U.S. Army Corps of Engineers,
	Fort Worth District
Cooperating Agencies:	N/A
Title of Proposed Action:	Lower Colorado River Basin Study
Affected Jurisdiction:	Lower Colorado River Basin, Colorado River, Texas

ABSTRACT:

The Lower Colorado River Basin Study is being conducted in response to authorization from the Congress of the United States and in cooperation with non-federal sponsors. This Programmatic Environmental Impact Statement (PEIS) focuses on various potential U.S. Army Corps of Engineers flood damage reduction and ecosystem restoration measures including potential projects that are being investigated as part of the Lower Colorado River Basin Study. Reasonably foreseeable projects by other entities are also identified, and the potential direct and cumulative impacts resulting from the implementation of the potential U.S. Army Corps of Engineers and other entities' projects on the human and natural environment are assessed. The document defines the baseline conditions within the basin, examines past actions of the U.S. Army Corps of Engineers and other entities within the study area, and then examines reasonably foreseeable alternatives of the U.S. Army Corps of Engineers and of others that might affect water and related land resources.

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EXECUTIVE SUMMARY

Project Description

The study area for this Programmatic Environmental Impact Statement (PEIS) is the lower Colorado River basin, extending from O.H. Ivie Reservoir downstream to the Gulf of Mexico. The lower Colorado River basin encompasses about 18,300 square miles of contributing drainage area. The total length of the Colorado River studied for this project is over 480 miles. The study area contains several major tributaries to the Colorado River, most notably the Llano River, Pedernales River, San Saba River, Pecan Bayou, Sandy Creek, and Onion Creek. Previous studies conducted along the lower Colorado River by the U.S. Army Corps of Engineers (USACE) and others have concluded that significant flood risks exist along the main stem of the river and some of its tributaries in the Austin area. In response to requests for assistance from the City of Austin (COA), Texas and the Lower Colorado River Authority (LCRA), the Congress of the United States authorized funding to USACE to conduct the Lower Colorado River Basin Study.

Phase I investigations of the Lower Colorado River Basin Study focused on identifying existing conditions regarding flood damages to residential, commercial, industrial and public structures, environmental conditions, opportunities for restoration of natural ecosystems, and recreational needs within the basin. In view of the high cost of conducting these studies and the identified cost-sharing sponsors, the Phase I study area was limited to the main stem of the river. Tributary areas will be addressed during additional interim feasibility studies, should potential sponsors emerge.

Interim feasibility studies are underway for Onion Creek in Travis County, for the City of Wharton in Wharton County, Texas, and for the Highland Lakes. These interim studies are focusing on known problem areas that were identified during past studies and confirmed during a Phase I Investigation. Two additional interim feasibility studies are known to be forthcoming: Walnut Creek and Shoal Creek watersheds in the COA. These interim feasibility studies constitute Phase II of the Lower Colorado River Basin Study.

The proposed action would implement all USACE flood damage reduction and ecosystem restoration measures in the lower Colorado River basin, including the interim feasibility studies described in the Lower Colorado River Basin Study, as well as the USACE's Mad Island and Austin Area Lakes Section 206 ecosystem restoration projects. The proposed action includes any combination of structural, non-structural and ecosystem restoration measures, at different scales, to serve as a future project or multiple projects. Structural measures may include one or a combination of

levees, floodwalls, relief channels, diversion channels, tunnels, channel improvements, dry detention basins, detention basins and multipurpose reservoirs. Non-structural measures could consist of the evacuation of the 25-year floodplain (buyouts), flood warning systems, floodproofing, changes in gate operations at existing reservoirs, and zoning. Ecosystem restoration projects can be a component of a larger project or stand-alone projects and are designed to restore a degraded environment to a less degraded state. Ecosystem restoration measures could include habitat preservation, removal of invasive species and the restoration of native species, and the removal or construction of structures.

Summary of Major Environmental Effects

An analysis of direct and indirect effects of the No Action and Proposed Action alternatives and the cumulative impacts of the Proposed Action in combination with other projects proposed by USACE, and projects of others, were analyzed to the extent that details of the various alternatives were available. Pertinent resources for which alternatives were evaluated include land use, hydraulics and hydrology, floodplains, socioeconomics, vegetational areas and soils, wildlife resources, freshwater resources, wetlands, marine resources including essential fish habitat, air quality, water and sediment quality, threatened and endangered species, cultural resources, recreation and open space, hazardous, toxic and radioactive waste, and environmental justice.

Impacts vary by measure and affected resource. In general, the proposed action could potentially result in significant cumulative effects to some resources such as vegetation, soils and wildlife. However, in the future any flood damage reduction or ecosystem restoration project in the lower Colorado River basin will be subjected to project-specific analyses conducted under the National Environmental Policy Act (NEPA). These analyses will likely be in the form of a project-specific Environmental Assessment (EA) or an Environmental Impact Statement (EIS). Appropriate mitigation measures will be identified in the project-specific NEPA document.

Public Involvement

A Notice of Intent (NOI) to prepare a draft PEIS for Flood Damage Reduction and Ecosystem Restoration along the Colorado River, Texas was published in the Federal Register on July 31, 2001 (see Appendix 1). The NOI provided background information related to the Flood Damage Reduction and Ecosystem Restoration Colorado River, Texas, current status of ongoing studies and

the rationale for preparing the PEIS.

Agency scoping meetings were conducted on July 15, 2002, July 10, 2003 and on February 4, 2004. A Notice of Public Scoping Meetings was mailed to all known interested parties on August 25, 2003. These meetings were held near Buchanan Dam, in Bastrop, and in Bay City, Texas on September 16, 17, and 18, 2003, respectively.

Major issues and concerns raised included: the need for the preservation of environmental quality, methods for structural and non-structural flood reduction, opportunities for ecosystem restoration, control of invasive plant species, maintenance of river flows and channel morphology, and communication regarding project progress.

The Draft PEIS was filed with the U.S. Environmental Protection Agency (EPA) on March 17, 2005 and a Notice of Availability (NOA) was published in the Federal Register on March 25, 2005. Copies of the Draft PEIS were placed in public libraries in Marble Falls, Austin, Bastrop, Wharton, and Bay City, Texas. Public meetings were held at Bastrop, Buchanan Dam, and Bay City, Texas on April 12, 13, and 14, 2005, respectively. Verbal comments were received from seven individuals in attendance. The official comment period remained open through May 10, 2005. A total of seven comment letters were received in response to the Draft PEIS.

In addition to the above-mentioned scoping meetings, other avenues provided opportunities to gather input for use in the preparation of the PEIS. They included additional meetings and coordination with multiple local, state and Federal agencies as well as a project web site that provided project information, project contacts, and an opportunity to submit comments or seek answers.

Areas of Controversy

Several areas of controversy were identified during the scoping process for this PEIS. One area of controversy was induced flooding that may occur downstream of individual projects. Another area of concern is the altered timing and duration of flows into Matagorda Bay as well as reductions in the quantity of freshwater inflows into Matagorda Bay.

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ACRONYMS AND ABBREVIATIONS

BEG	Bureau of Economic Geology
BMP	Best Management Practice
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERCLIS	Comprehensive Environmental Response, Compensations, and Liability Information System
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
cfs	cubic feet per second
CO	carbon monoxide
CO_2	carbon dioxide
CFR	Code of Federal Regulations
DPEIS	Draft Programmatic Environmental Impact Statement
EA	Environmental Assessment
EIS	Environmental Impact Statement
EFH	Essential Fish Habitat
EPA	U.S. Environmental Protection Agency
EO	Executive Order
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FMP	Fishery Management Plan
FPMP	Flood Plain Management Plan
FPPA	Farmland Protection Policy Act
GIS	Geographical Information System
GIWW	Gulf Intracoastal Waterway
GMFMC	Gulf of Mexico Fishery Management Council
gpm	gallons per minute
HMS	Highly Migratory Species

HTRW	Hazardous, Toxic, and Radioactive Waste
IWG	Interagency Working Group
LBJ	Lyndon B. Johnson
LCRA	Lower Colorado River Authority
LCRBS	Lower Colorado River Basin Study
LCRWPG	Lower Colorado Regional Water Planning Group
LU/LC	Land Use/ Land Cover
MBTA	Migratory Bird Treaty Act
mg/l	milligrams per liter
mlw	mean low water
MOA	Memorandum of Agreement
MSA	Metropolitan Statistical Area
msl	mean sea level
NAAQS	National Ambient Air Quality Standards
NAVD	North American Vertical Datum
NEPA	National Environmental Policy Act
NGVD	National Geodetic Vertical Datum
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NO_x	nitrogen oxide
NOA	Notice of Availability
NOAA	National Oceanographic and Atmospheric Administration
NOI	Notice of Intent
NPL	National Priority List
NRCS	Natural Resources Conservation Service (formerly the Soil Conservation Service)
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
O_3	Ozone
OAQPS	Office of Air Quality Planning and Standards
OCIFS	Onion Creek Interim Feasibility Study
OSHA	Occupational Safety and Health Administration

PEIS	Programmatic Environmental Impact Statement
PM	particulate matter
PM10	particulate matter with a diameter less than 10 microns
PM2.5	particulate matter with a diameter less than 2.5 microns
ppb	parts per billion
ppm	parts per million
RADINFO	Radiation Information Database
RAD-NESHAP	Radioactive-National Emissions Standards for Hazardous Air Pollutants
RCRAInfo	Resource Conservation and Recovery Act Information
SARA	Superfund Amendments and Reauthorization Act
SAWS	San Antonio Watery System
SCS	Soil Conservation Service (Now the Natural Resources Conservation Service)
SHPO	State Historic Preservation Office
SO_2	sulfur dioxide
SWPPP	Storm Water Pollution Prvention Plan
TARL	Texas Archeological Research Laboratory
TCEQ	Texas Commission on Environmental Quality
TCMP	Texas Coastal Management Plan
TCPA	Texas Comptroller of Public Accounts
TCRFC	Texas Colorado River Floodplain Coalition
TMDL	Total Maximum Daily Load
TNC	The National Conservatory
TNRCC	Texas National Resource Conservation Commission (now the Texas Commision on Environmental Quality)
TRI	Toxic Release Inventory
TPWD	Texas Parks and Wildlife Department
TSCA	Toxic Substance Control Act
TWC	Texas Water Commission
TWDB	Texas Water Development Board
TxDOT	Texas Department of Transportation
TXSDC	Texas State Data Center
USACE	U.S. Army Corps of Engineers

USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOC	volatile organic compound
WMA	Wildlife Management Area

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